DOCUMENT RESUME

ED 399 951 IR 056 067

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TITLE Enhancing Information Literacy Skills Across the Curriculum.
PUB DATE Feb 95
NOTE 5p.; In: Literacy: Traditional, Cultural, Technological. Selected Papers from the Annual Conference of the International Association of School Librarianship (23rd, Pittsburgh, Pennsylvania, July 17-22, 1994); see IR 056 058.
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Access to Information; Elementary Secondary Education; Foreign Countries; *Information Literacy; Information Retrieval; *Information Skills; Library Materials; Models; Research Skills; *Research Tools; *Search Strategies; User Needs (Information)
IDENTIFIERS *Resource Based Learning; Teacher Librarians

ABSTRACT

Information literacy is an set of acquired skills and strategies which encompass the abilities to recognize a need for information, to retrieve the required information, and to evaluate and utilize it effectively. Teaching students how to structure, acquire, analyze, and synthesize information must start much earlier than at the post-secondary level. The paper provides a brief review of the history and development of the information literacy project, and describes the resource-based approach that the model utilizes. The information literacy model strives to be an effective tool designed to help students and teacher-librarians in elaborating their research paths. A fundamental assumption upon which the model is based is that the presentation of a rich variety of information resources as well as suggested paths to retrieve these resources will improve the quality of search strategies used and, as a consequence, the research produced. The model is comprised of two major components: an inventory and analysis of identified categories of resources, and the individual research paths designed for each category which outline the process which one might follow in order to rapidly and efficiently utilize a resource. The process fosters independent, cooperative, and resource-based learning.
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ED 399 951

Enhancing Information Literacy Skills Across the Curriculum

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Introduction

The primary objective of this paper is to present an innovative model that will assist both students and teacher-librarians with research techniques. The model strives to improve the level of information literacy of users, in particular students at the elementary, high school and post-secondary levels. This model has been developed within the context of an information literacy research project. After a brief review of the history and development of the project, the paper describes the resource-based approach that the model has adopted.

Definition of Information Literacy

Information literacy is a set of skills and strategies which encompass the abilities to recognize a need for information, to retrieve the required information, and to evaluate and utilize it effectively. The ALA Presidential Committee on Information Literacy further elaborated in the following manner. "Information literacy is a survival skill in the Information Age. Instead of drowning in the abundance of information that floods their lives, information literate people know how to find, evaluate and use information effectively, to solve a particular problem or ;make a decision--whether the information they select comes from a computer, a book, a government agency, a film or any number of other possible sources."[1]

Information literacy is, in fact, an ensemble of skills which must be acquired. One of the early conclusions emanating from this research project is that teaching students how to structure, acquire, analyze and synthesize information must start much earlier that at the post-secondary level. His is the main reason that the scope of the original project was extended to include elementary and high school libraries. It is our responsibility, as library professionals, to begin in elementary school to introduce students to the concept of information literacy, and never to relax our vigilance in this respect. This is also the moment in time when school librarians have the opportunity to take charge and become the facilitators of information access at all levels of society. Information retrieval skills acquired at an early age will have lifelong benefits in terms of learning.

Background to Model Development

Before discussing the model currently in development, an explanation of how and why it evolved is in order. Concordia University in Montreal offers both an undergraduate B.A. with a major in library studies and a graduate diploma the field. In the undergraduate program, there is an introductory course which is compulsory for all students enrolled in the Library Studies Programme. This course, originally called "Introduction to Library Science," progressed through several stages of evolution spanning a period of approximately twenty years. Initially the course was structured in a traditional lecture format and introduced the basic principles involved in library studies. How-ever, because many of the students enrolled in this course were either working in libraries, or had previous library experience, much of the material was familiar to them. Therefore, as a first step towards remedying the situation, the Personalized System of Instruction (PSI) method of teaching and learning was implemented. This system recognizes that individuals have differing levels of knowledge and progress through the material at different rates.

Once the PSI method of teaching was adopted, both students and lecturers found it very attractive. Students could work independently and progress through the course at their own pace. Unfortunately, this method of teaching requires a high ratio of monitors to students which makes it expensive to manage. Therefore, even though this formula met with success for a number of years was eventually abandoned due to financial cutbacks.

As the profiles of the students enrolled in the course were investigated, it was noted that many of the students were not library studies majors. They were students from other disciplines who had elected to take this introductory course to enhance their research skills. Further analysis revealed that these

IR056067

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students preferred the "research" component of the course and were not as interested in "library" topics, such as organization and functions of the library.

Based on these observations, the Programme decided to continue its basic library course for students enrolled in the major and to introduce a new course specifically designed for non-library studies majors entitled "introduction to Library Research Practices." Its objectives were essentially threefold. First, it provides the student with an understanding of the research process and the variety of information sources at their disposition. Second, it assists the student in formulating appropriate search strategies for different types of research requirements. Finally, it assists students in evaluating and organizing information retrieved.

The final stage in the evolution of these courses involved the development of information courses geared to the needs of specific disciplines The first course developed in this vein was a reference course for science students. Its objective was to provide students in the fields of chemistry and physics with an introduction to the tools in their discipline. The Programme hopes to pursue this avenue and to offer an increasing number of courses geared to research in other disciplines, such as fine arts, economics, and engineering. These developments will be pursued when the appropriate funding is in place.

Several conclusions were drawn based on these developments. First, research oriented courses do meet the needs of undergraduate students. Despite the fact that students are obliged to conduct research, many do not have the necessary skills to access the wealth of material at their disposal. The course teaches them to expand their research skills beyond the rudimentary search in the library catalog or the cursory scanning of encyclopedias. One study discusses the attitude of faculty vis-a-vis students' abilities to find information. According to the findings, "seventy percent of faculty surveyed believed that incoming freshmen to not have the necessary skills to use a research library. Eighty-eight percent of faculty believed that it is important for college students to know how to use the library."[2] While faculty members generally do not feel they should be responsible for teaching these skills, they obviously feel that they are essential to succeed in university.

This unfortunate lack of research skills is not the fault of school librarians who have been entrusted with the students at the earliest age, and who for decades have been trying to impart these skills. Rather it is indicative of the failure of a school system that while preaching resource-based learning bypasses the essential catalyst in the process, namely the school librarian.

The Seagram Research Grant

The research course for non-library studies students is currently offered both day and evening each semester. While the course is popular and fills to capacity, it can at best accommodate one hundred and twenty students per year. In order to reach a larger student population and to extend the project beyond the Programme, the faculty team of Joanne Locke, Anne Galler, and Marlene Giguere submitted a proposal to enhance the level of student information literacy across the curriculum. The project received funding from the Seagram Fund for Academic Innovation, a grant offered by the Seagram Company to Concordia faculty for innovative projects.

The project is founded on a resource-based approach to information retrieval which assumes that research must begin with the determination of the type of information required to meet a given research need. First year development was focused on the creation of a comprehensive, inclusive model of all potential resources. Second year development is scheduled to include an electronic version of the model available for student consultation.

The Information Literacy Model

The information literacy model strives to be an effective tool designed to help students in elaborating their research paths. Because of its resource-based approach, it makes users more aware of the variety of resources available to them and provides them with succinct information about the utility of each resource, thereby facilitating their choices. Furthermore, once the user has made an informed selection among the potential resources available, the model then supplies a research path to assist the user in locating these resources. A fundamental assumption upon which the model is based is that the presentation of a rich variety of information resources as well as suggested paths to retrieve these resources will improve the quality of search strategies used and as a consequence, the research produced.

In their document *Preparing Students for Information Literacy: School Library Pro-*

grams and the Cooperative Planning Process, Barry Eshpeter and Judy Gray break down the development of research strategies into five main phases which represent the Information Cycle.[3] As illustrated in Figure 1, the categories are: pre-research, information retrieval, information processing, information organizing and creating, and information sharing. The information literacy model contributes to the information retrieval category, which is the second step in the process following the pre-research phase. The student enters the information retrieval stage with a topic which has been generated and clarified. This stage is defined by the authors as the "application of differentiated strategies in locating resources relevant to the information needed."[4] The literacy model is the framework which helps to organize and illustrate the steps involved in the retrieval process of a type of resource. It is founded on the belief that research should begin with a determination of the type(s) of information required to meet a particular research need.

The model is comprised of two major components. The first is an inventory and analysis of identified categories of resources. It is important to note that a category of resource can be the item that contains the desired information (such as a directory) or it can be the item that refers the user to the desired information (such as a periodical index). Resources can be available in print, nonprint, or electronic formats. To date, approximately fifty-five categories of resources have been identified with some analysis having been completed on the majority. The analysis of a category includes a variety of different kinds of information as illustrated in Figure 2.

In reality, the identification and analysis of each category of resource is a task which librarians engage in regularly. However, to this point, our research reveals that style manuals, guides to writing research papers, resource handbooks within the various disciplines, and the literature of bibliographic instruction and school librarianship have fallen short of providing this level of detail in their suggested strategies.

The second component of the model is comprised of the individual research paths designed for each category. These paths clearly outline the process which one might follow in order to rapidly and efficiently utilize a resource. These paths clearly outline the process which one might follow in order to rapidly and efficiently utilize a resource. These paths can be depicted in a number of ways. When presented as a wheel,[5] the spokes represent the research path, emanating from the center which is the research question or need (Level 1). Once that information need has been identified (or clarified), the path to the end material which will satisfy the information need (Level 6) is illustrated through the spokes. Figure 3 traces and defines the process from Level 1 through Level 8.

Use of the Model

Use of the model by the student requires that each student have access to a number of different elements. They are the list of categories of resources available, a definition of the benefits of using each of these categories, which includes an explanation of the kinds of information to be found within that category, a path or strategy for retrieving the specified resource, and a flowchart depicting the structure of that category. With this knowledge base, the student has the opportunity to work more autonomously from an early age. The student is encouraged to decide on a category of resource based on an analysis of its utility and subsequently explore the selected category of resource. In order for this to work effectively, students should be introduced to the process at an early age. If for example, at the primary school level, students learn about dictionaries and encyclopedias, they will assimilate this information and use it on a lifelong basis. This is a progressive and cumulative process.

For the teacher-librarian the use of the model provides apparent benefits. First, the teacher-librarian can scan and select the categories to which the student should be introduced and locate a basic description and analysis about the selected categories. The initial guidance offered to the student for finding the resource is mapped out. In this manner, the student can work more independently, freeing the teacher-librarian for other tasks. In addition, the generic nature of the model means it can be adapted to any aca-demic library be it school, college, or university. Finally, this process fosters independent, cooperative, and resource based learning.

End Notes

[1] American Library Association Presidential Committee on Information Literacy. *Final Report*. January 1989, p.6.

[2] Rae Haws and Lorna Peterson. "Survey of Faculty Attitudes Towards a Basic Library Skills Course," *C&RL News*, 52 (March 1989): 38.

[3] Barry Eshpeter & Judy Gray. *Preparing Students for Information Literacy: School Library Programs and the Cooperative Planning Process*. Calgary Board of Education, 1989, P. 30.

[4] *Ibid.*, p. 38.

[5] The idea of representing the model as a wheel was proposed by Catherine Wilkins, Librarian with the Peel Board of Education, Toronto Canada.